

## ABSTRACT

T cells of a graft recipient are stimulated in-vitro by cells of a graft donor or by cells which express dominant MHC-molecules, while they are transduced with immunomodulatory genes using gene transfer. Following the gene transfer the transduced T cells start to express immuno-modulatory genes. The gene transfer can be accomplished using retroviruses, other viral vector systems or liposomes. Due to the chosen set-up of the experiment, which leads to the generation and expansion of allospecific T cells, the T cells migrate, after the in-vivo application, specifically into the allogeneic graft as well as into the draining lymph nodes and are then able to express the immuno-modulatory genes there. Rejection of allogeneic grafts (cells, tissues, organs) can be successfully prevented, tolerance towards allogeneic grafts can be induced and maintained.